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EXAMINER

FISCHER, JUSTIN R

ART UNIT

PAPER NUMBER

1733

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9

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/607,070

Applicant(s)

YURJEVICH ET AL.

Examiner

Justin R Fischer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 August 2002.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,7-17,21,22 and 24-33 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,7-17,21,22 and 24-33 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_                      6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1 and 7-11 are rejected under 35 U.S.C. 102(b) as being anticipated by Gardner (US 3,949,798). As best depicted in Figure 1, Gardner discloses a runflat tire construction having a pair of axially-spaced bead portions, each having a bead core, a pair of axially-spaced sidewalls, at least one carcass ply, and a runflat insert in each of said sidewalls, wherein said sidewalls have a radial portion and a cantilever portion (Figure 1 and Column 2, Lines 7-13). In describing the cantilever portion, Gardner states that the relevant inclination angle is between 0 and 40 degrees with respect to the axis of rotation.

### ***Claim Rejections - 35 USC § 102 / 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 32 and 33 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Gardner. Gardner discloses a

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runflat tire construction having a pair of axially-spaced bead portions, each having a bead core, a pair of axially-spaced sidewalls, at least one carcass ply, and a runflat insert in each of said sidewalls, wherein said sidewalls have a radial portion and a cantilever portion (Figure 1 and Column 2, Lines 7-13). Furthermore, Figure 1 of Gardner depicts a rubber layer that is disposed between the main carcass portion and turnup carcass portion and extends radially outward from a bead core. This rubber layer is analogous to the "bead filler" of the claimed invention. While said rubber layer is not depicted as a separate and distinct component, bead fillers represent a well known and conventional tire component that provide a desired degree of structure and reinforcement (rigidity) in the bead region of the tire and one of ordinary skill in the art at the time of the invention would have readily appreciated and expected the tire of Gardner to include such a well known and conventional tire component. It is further noted that Figure 1 of Gardner depicts an embodiment in which the axially outer end of the bead filler and the radially inner end of said runflat insert have a slight degree of overlap in the axial direction.

***Claim Rejections - 35 USC § 103***

5. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner and further in view of Willard, Jr. (US 5,511,599) and Willard, Jr. (US 5,868,190). Gardner discloses a runflat tire construction in which the sidewall is formed of an upper "radial portion" and a lower "cantilever" portion, wherein said cantilever portion is disposed at an angle between 0 and 40 degrees with respect to the equatorial plane of the tire. However, the reference is completely silent with respect to the specific arrangement of the bead portion and thus necessarily fails to suggest the claimed

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extension of the bead filler or the bead portion into the region at which the radially outer end of the sidewall insert is located. While Figure 1 depicts an embodiment in which the bead portion terminates in the lower sidewall region (just above rim flange), one of ordinary skill in the art at the time of the invention would have recognized that this embodiment is only exemplary and additional, well-known construction would have been within the scope of the tire design of Gardner. Willard, Jr. '599 (Figure 2 and Column 9, Lines 14-18) and Willard, Jr. '190 (Figure 3 and Column 9, Lines 15-16) evidence the well known, runflat tire construction in which a bead filler functions as an additional sidewall insert and extends into the shoulder region and terminates at a radial position that is adjacent the radially outer end of the sidewall insert. As such, one of ordinary skill in the art at the time of the invention would have readily appreciated the extension of the bead filler in Gardner into the shoulder region to provide an additional sidewall insert, thereby optimizing the rigidity and flexing characteristics under normal and underinflated running, without the need to include an entirely separate sidewall insert. It should additionally be noted that plural sidewall inserts are extensively used in the manufacture of current, runflat tires and as such, one of ordinary skill in the art at the time of the invention would have readily appreciated the functioning of a bead filler as an additional sidewall insert in the runflat tire of Gardner.

6. Claims 13-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner, Willard, Jr. '599, and Willard, Jr. '190 as applied to claim 12 above and further in view of Kobayashi (US 6,138,732) and Nishikawa (US 6,209,604). Gardner, in view of Willard, Jr. '599 and Willard, Jr. '190, disclose a runflat tire construction having the claimed arrangement in which a bead filler extends through a lower "radial portion" and

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an upper "cantilever" portion and functions as an additional sidewall insert, wherein said bead filler terminates at a radial position that is adjacent the radially outer end of a sidewall insert. However, in describing the use of a plurality of carcass plies, the reference fails to explicitly depict or describe the placement of said bead filler between the respective carcass plies (first and second). In any event, one of ordinary skill in the art at the time of the invention would have recognized that it is extremely conventional in similar runflat tire constructions to form an outermost carcass ply in a down configuration, such that the bead filler is disposed between a first and second carcass ply, as evidenced by Kobayashi (Figure 1) and Nishikawa (Figure 1). It is further noted that this arrangement is extensively used in a plurality of tires, including runflat tires, in order to provide the desired rigidity over the extent of the sidewall without the introduction of additional sidewall reinforcing plies (carcass turnup portions do not usually extend over entire sidewall). As such, one of ordinary skill in the art at the time of the invention would have found it obvious to position the bead filler of Gardner between a first and second carcass ply, in view of Kobayashi and Nishikawa, for the benefits detailed above.

With respect to claim 15, one of ordinary skill in the art at the time of the invention would have recognized that the turnup portion of a first, innermost carcass ply can be axially inward of the down portion of a second carcass ply (enveloped) or axially outward of the down portion of a down carcass ply, as required by the claimed invention. In this instance, both configurations are extensively used in the tire industry and as such, one of ordinary skill in the art at the time of the invention would have readily appreciated the use of either configuration in the runflat tire of Gardner since

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they represent alternative tire constructions that provide equivalent reinforcement in the turnup portion of a tire, there being no evidence of any unexpected results to establish a criticality for the claimed turnup structure.

7. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner in view of Kobayashi and Nishikawa. Gardner discloses a runflat tire construction in which the sidewall is formed of an upper "radial portion" and a lower "cantilever" portion, wherein said cantilever portion is disposed at an angle between 0 and 40 degrees with respect to the equatorial plane of the tire. As depicted in Figure 1, a bead filler is disposed between the main portion and turnup portion of a single carcass ply (monopoly embodiment). However, the reference further states that a plurality of carcass plies can be used (Column 3, Lines 53-55). In this instance, though, the reference fails to describe the arrangement of the additional carcass plies and as such, there is no specific suggestion to position said bead filler between a first and second carcass ply (mainly achieved by having down ply arrangement). In any event, one of ordinary skill in the art at the time of the invention would have recognized that it is extremely conventional in similar runflat tire constructions to form an outermost carcass ply in a down configuration, such that the bead filler is disposed between a first and second carcass ply, as evidenced by Kobayashi (Figure 1) and Nishikawa (Figure 1). It is further noted that this arrangement is extensively used in a plurality of tires, including runflat tires, in order to provide the desired rigidity over the extent of the sidewall without the introduction of additional sidewall reinforcing plies (carcass turnup portions do not usually extend over entire sidewall). As such, one of ordinary skill in the art at the time of the invention would have found it obvious to position the bead filler of Gardner

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between a first and second carcass ply, in view of Kobayashi and Nishikawa, for the benefits detailed above.

8. Claims 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner and further in view of Powers (US 3,392,772). As previously set forth, Gardner teaches all the limitations detailed by the independent claim, including a sidewall formed of an upper "radial" portion and a lower "cantilever" portion. The reference, however, is silent with respect to the use of a stiffener ring in each of the sidewall cantilever portions. In any event, Powers suggests the use of stiffener rings in similar safety tires formed of cantilever portions, as best depicted in Figures 1-3, to resist lateral distortion of the sidewalls (Column 2, Lines 53-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a pair of stiffener rings in each of the sidewall cantilever portions of Garner, as suggested by Powers, as further set forth below.

Regarding claim 24, the runflat tire of Gardner clearly contains a sidewall insert and a sidewall cantilever portion, thereby forming a profile having a narrow rim and a closed bead assembly (beads are closer together). Powers teaches the use of stiffener rings in similar safety tires having sidewall cantilever portions to resist lateral distortion of the sidewalls. Thus, it is evident that the stiffener ring assembly described by Powers would be beneficial in an analogous manner when placed within the runflat tire of Gardner.

With respect to claims 25-30, Powers describes a plurality of arrangements for said stiffener rings, including on the interior of the sidewalls and within the tire sidewalls. Furthermore, it is evident from Figures 1 and 2 that such a description is directed toward



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embodiments in which the stiffener ring is disposed inside the body cords and outside the body cords. Regarding claim 29, though the reference does not specifically describe the arrangement "outside the body plies", the reference does communicate the general use of stiffener rings in a variety of locations in the bead region and one of ordinary skill in the art at the time of the invention would have readily appreciated additional locations in the bead region not specifically outlined by Powers, such as "outside the body plies". With respect to claim 30, Figure 3 depicts a design in which at least two belt layers are used and the stiffeners rings are disposed between body plies.

9. Claim 31 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gardner and further in view of Hirayama (JP 63141809). Gardner discloses a runflat tire construction in which the sidewall is formed of an upper "radial portion" and a lower "cantilever" portion, wherein said cantilever portion is disposed at an angle between 0 and 40 degrees with respect to the equatorial plane of the tire. Though Gardner is silent with respect to the use of a runflat band element, such a design is extensively used in runflat tires as a compliment to sidewall inserts in order to obtain optimum runflat characteristics. For example, Hirayama suggests that the combination of a runflat band element and a pair of sidewall inserts provides the necessary compression strength and sidewall rigidity to affectively provide a tire with the ability to run in an unpressurized condition. Thus, it would have been obvious to one of ordinary skill in the art at the time of the invention to include both runflat reinforcing elements (band element and sidewall insert) in the runflat tire of Gardner, as suggested by Hirayama, for the benefits detailed above.

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10. Claims 1, 7, 8, 12-17, 21, 22, 32, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi and further in view of Gardner. As best depicted in Figure 1, Kobayashi discloses a runflat tire construction in which a sidewall insert is disposed axially inward of a first carcass ply. The reference, however, fails to describe the sidewall as being formed of a "radial" portion and a "cantilever" portion. Gardner, though, is directed to a similar, runflat tire construction having a sidewall insert axially inward of a first carcass ply, wherein the lower sidewall is cantilevered at an angle less than 40 degrees with respect to the tire axis of rotation in order to provide a stable construction in an underinflated state (sidewalls are positioned or trapped axially outside of rim flange). One of ordinary skill in the art at the time of the invention would have found it obvious to cantilever the lower sidewall of Kobayashi, in view of Gardner, to obtain the aforementioned benefits when the tire of Kobayashi becomes deflated.

With respect to claims 12-16, Kobayashi states that the outer end of the bead filler extends up to at least a position of the maximum tire width. While there is no specific suggestion to extend said bead filler into the shoulder region, one of ordinary skill in the art at the time of the invention would have readily appreciated such a design in the view of the language of Kobayashi ("at least a position...") since it provides additional reinforcement and runflat capabilities without the introduction of an entirely separate insert or layer. Also, regarding claim 15, one of ordinary skill in the art at the time of the invention would have recognized that the turnup portion of a first, innermost carcass ply can be axially inward of the down portion of a second carcass ply (enveloped) or axially outward of the down portion of a down carcass ply, as required by the claimed invention. In this instance, both configurations are extensively used in the

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tire industry and as such, one of ordinary skill in the art at the time of the invention would have readily appreciated the use of either configuration in the runflat tire of Kobayashi since they represent alternative tire constructions that provide equivalent reinforcement in the turnup portion of a tire, there being no evidence of any unexpected results to establish a criticality for the claimed turnup structure.

Regarding claims 21 and 22, as detailed in Table 2, Kobayashi is specifically directed to a runflat tire design in which a rubber having the same hardness is used in the bead filler and the sidewall insert. Furthermore, the examples of Table 2 show hardness values of 70 and 79 for each of the tire components, wherein each of these values is within the broad range of the claimed invention (Column 5, Lines 50-55). Regarding the modulus, while Kobayashi fails to expressly describe this parameter, one of ordinary skill in the art at the time of the invention would have expected the rubber compositions of Kobayashi (filler and insert) to have a modulus between 1,400 and 4,000 psi since this range is extremely broad and it is known that the hardness and modulus have a positive relationship (similar hardness usually equates to similar modulus). Thus, since the hardness values suggested by Kobayashi are within the range of the claimed invention, one of ordinary skill in the art at the time of the invention would have readily appreciated the rubber compositions of Kobayashi having a mechanical modulus within the broad range of the claimed invention. Lastly, the loss tangent range of between 0.03 and 0.2 is extremely well known and conventional in the runflat tire industry, wherein the primary characteristics of a runflat insert are high hardness/modulus and low heat generation (small loss tangent).

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11. Claims 24-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kobayashi and Gardner as applied to claim 1 above, and further in view of Powers. Kobayashi, in view of Gardner, teaches a runflat tire construction in which a sidewall is formed of an upper "radial" portion and a lower "cantilever" portion. The references, however, are silent with respect to the use of a stiffener ring in each of the sidewall cantilever portions. In any event, Powers suggests the use of stiffener rings in similar safety tires formed of cantilever portions, as best depicted in Figures 1-3, to resist lateral distortion of the sidewalls (Column 2, Lines 53-57). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to include a pair of stiffener rings in each of the sidewall cantilever portions of Garner, as suggested by Powers, as further set forth below.

Regarding claim 24, the runflat tire of Gardner clearly contains a sidewall insert and a sidewall cantilever portion, thereby forming a profile having a narrow rim and a closed bead assembly (beads are closer together). Powers teaches the use of stiffener rings in similar safety tires having sidewall cantilever portions to resist lateral distortion of the sidewalls. Thus, it is evident that the stiffener ring assembly described by Powers would be beneficial in an analogous manner when placed within the runflat tire of Gardner.

With respect to claims 25-30, Powers describes a plurality of arrangements for said stiffener rings, including on the interior of the sidewalls and within the tire sidewalls. Furthermore, it is evident from Figures 1 and 2 that such a description is directed toward embodiments in which the stiffener ring is disposed inside the body cords and outside the body cords. Regarding claim 29, though the reference does not specifically

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describe the arrangement "outside the body plies", the reference does communicate the general use of stiffener rings in a variety of locations in the bead region and one of ordinary skill in the art at the time of the invention would have readily appreciated additional locations in the bead region not specifically outlined by Powers, such as "outside the body plies". With respect to claim 30, Figure 3 depicts a design in which at least two belt layers are used and the stiffeners rings are disposed between body plies.

### ***Response to Arguments***

12. Applicant's arguments with respect to claims 1, 7-17, and 21-32 have been considered but are moot in view of the new ground(s) of rejection. In light of newly found prior art references (Gardner), the rejections set forth in the previous office actions with respect to Boileau and Paonessa have been withdrawn from consideration.

### ***Conclusion***

13. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Justin R Fischer** whose telephone number is **(703) 605-4397**. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.



Justin Fischer

November 18, 2002



Michael W. Ball  
Supervisory Patent Examiner  
Technology Center 1700